

IN THE CLAIMS

1 1. (original) A digital signal processor, comprising:
2 a content addressable memory (CAM) array having a plurality of rows of CAM
3 cells;
4 an array of storage elements having a plurality of rows of the storage elements
5 coupled to the CAM array, each row of storage elements to store a number corresponding
6 to a data word stored in one of the rows of the CAM cells; and
7 priority logic coupled to the array of storage elements, the priority logic to provide
8 to a plurality of priority signal lines an indication of a location of a particular number in
9 the array of storage elements, wherein the priority logic comprises:
10 a first plurality of compare circuits, each compare circuit coupled to one of
11 the storage elements in the array of storage elements, and each compare circuit
12 having a first input coupled to a storage element, a second input coupled to a
13 match line, and an input/output line coupled to one of the plurality of priority
14 signal lines; and
15 a delay circuit coupled to each of the first plurality of compare circuits.

1 2. (original) The digital signal processor of claim 1, wherein the delay circuit
2 comprises a multiple tap delay circuit.

1 3. (original) The digital signal processor of claim 1, wherein the delay circuit
2 comprises a plurality of delay elements, each of the plurality of delay elements coupled to
3 one of the plurality of compare circuits.

1 4 (original) The digital signal processor of claim 3, wherein each of the delay
2 elements is programmable.

1 5. (original) The digital signal processor of claim 1, wherein each of the compare
2 circuits comprise a first transistor having a drain coupled to a corresponding priority
3 signal line and having a gate coupled to a corresponding storage element.

- 1 6. (original) The digital signal processor of claim 5, wherein the gate of the first
2 transistor is coupled to the delay circuit through one or more logic gates.
- 1 7. (original) The digital signal processor of claim 6, wherein the delay circuit
2 comprises a plurality of delay elements, each of the plurality of delay elements having an
3 output coupled to one of the plurality of compare circuits.
- 1 8. (original) The digital signal processor of claim 7, wherein the one or more logic
2 gates comprise a NAND gate having a first input coupled to a corresponding match line
3 and a having a second input coupled to a corresponding output of one of the delay
4 elements.
- 1 9. (original) The digital signal processor of claim 8, wherein the NAND gate has an
2 output and wherein the one or more logic gates further comprise a NOR gate having a
3 first input coupled the output of the NAND gate, and wherein the NOR gate has an output
4 coupled to the gate of the first transistor.
- 1 10. (original) The digital signal processor of claim 1, further comprising:
2 a policy statement table for storing a plurality of policy statements; and
3 a priority index table for storing a plurality of priority numbers, each priority
4 number associated with a corresponding policy statement and indicating the priority of the
5 corresponding policy statement relative to the other policy statements, wherein the priority
6 index table comprises the priority logic coupled to the policy statement table, wherein the
7 priority logic provides the most significant priority number to a plurality of priority signal
8 lines.
- 1 11. (original) The digital signal processor of claim 1, wherein the first plurality of
2 compare circuits are coupled in a sequence, each of compare circuit having a third input
3 coupled to a preceding compare circuit in the sequence.

1 12. (original) The digital signal processor of claim 11, wherein each of the compare
2 circuits comprise a first transistor having a drain coupled to a corresponding priority
3 signal line and having a gate coupled to a corresponding storage element, wherein the
4 gate of the first transistor is coupled to the delay circuit through one or more logic gates.

1 13. (original) The digital signal processor of claim 12, wherein the third input of the
2 compare circuit is coupled to the one or more logic gates.

1 14. (original) The digital signal processor of claim 13, wherein the one or more logic
2 gates comprise a first NOR gate having a first input coupled the third input of the
3 compare circuit, the first NOR gate having an output coupled to the gate of the first
4 transistor.

1 15. (original) The digital signal processor of claim 14, wherein each of the compare
2 circuits further comprises a second NOR gate having an input coupled to the gate of the
3 first transistor, the second NOR gate having an output coupled to the first NOR gate of a
4 succeeding compare circuit in the sequence.

1 16. (currently amended) A method of operating a digital signal processor, comprising:
2 resolving outputting a first priority number signal on a priority line coupled to a
3 first column of compare circuits, the first priority number signal having one of at least
4 two logical signal levels based, at least in part, on a comparison of priority number bits
5 stored within a first column of priority number storage elements coupled to the first
6 column of compare circuits; and
7 concurrently, de-asserting a match line in the first column of compare circuits and
8 resolving outputting a second priority number signal on a next priority line coupled to a
9 second column of compare circuits, the second priority number signal having one of the
10 at least two logical signal levels based, in part, on a comparison of priority number bits
11 stored within a second column of priority number storage elements coupled to the second
12 column of compare circuits.

1 17. (original) The method of claim 16, further comprising de-asserting a match line in

2 the second column of compare circuits.

1 18. (currently amended) A digital signal processor, comprising:

2 means for ~~resolving~~ outputting a first priority number signal on a priority line
3 coupled to a first column of compare circuits, the first priority number signal having one
4 of at least two logical signal levels based, at least in part, on a comparison of priority
5 number bits stored within a first column of priority number storage elements coupled to
6 the first column of compare circuits; and

7 means for concurrently, de-asserting a match line in the first column of compare
8 circuits and ~~resolving~~ outputting a second priority number signal on a next priority line
9 coupled to a second column of compare circuits, the second priority number signal
10 having one of the at least two logical signal levels based, in part, on a comparison of
11 priority number bits stored within a second column of priority number storage elements
12 coupled to the second column of compare circuits.

1 19. (original) The digital signal processor of claim 17, further comprising means for
2 de-asserting a match line in the second column of compare circuits.